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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the water-repellent fishing reel.

[0002]

[Description of the Prior Art] Generally, a fishing rod and the reel for \*\* tend to be damp among \*\*\*\*\* indispensable to the fishing in a river, a lake, the sea, etc. in water or seawater. Since degradation of a fishing rod and the reel for \*\* is promoted by adhesion of the waterdrop by about it, rain, or the wave droplet, the cure against waterproofing is demanded by it. especially -- the reel for \*\* -- the composition -- when water infiltrates even not only into the outside surface of a member but into a internal structure, in order to be hard to repair and to cause the poor operation by rust or \*\*\*\*\* it not only to to promote degradation of a component part, but, the cure against waterproofing is required

[0003] As a cure against waterproofing, on the surface of \*\*\*\*\* , a water-repellent coat is formed and it is indicated about the fishing goods characterized by proposing the method of giving a water-repellent finish, for example, giving a water-repellent finish on the front face of a fishing rod or the reel for \*\* at the patent No. 2725175 official report.

[0004] In the above-mentioned official report, while preventing adhesion in outside surfaces, such as thread which was damp with water by giving only the outside surface of the member of fishing goods, such as a fishing rod, a water-repellent finish, and a contaminant which stuck to waterdrop, preventing the rust and corrosion of an outside surface of a member is indicated.

[0005]

[Problem(s) to be Solved by the Invention] However, although the measures against waterproofing are taken by giving only the front face of each part material a water-repellent finish in the above-mentioned official report As opposed to \*\*\*\*\* which has a complicated internal structure like the reel for \*\* each composition -- the composition which the water which sewed the gap of a member and adsorbed seawater and the contaminant inside the main part of a reel invades, and has the structural site on which water tends to collect -- the problem that a salt, a contaminant, etc. adhere to the crevice between members, or between each part material is rusted, and a reel becomes a poor operation is solved

[0006] Furthermore, when the particle and fiber of a fluorine compound were distributed in the base material of polymer, a water-repellent coat is formed in a member or grease is applied and given a water-repellent finish as indicated by the above-mentioned official report, each part material will be mutually combined with the base material and grease of polymer, and there is a trouble that a reel will become operation impotentia after all. Therefore, it not being suitable for what carried out complicated structure like the reel for \*\* having distributed the particle and fiber of a fluorine compound in the base material of polymer, forming a water-repellent coat in a member, or applying and giving grease a water-repellent finish, furthermore giving such a water-repellent finish to the precise composition member inside the main part of a reel will cause the operation impotentia of a reel.

[0007] Then, this invention aims at offering the reel for \*\* excellent in flood-proof nature, operation endurance, etc. by giving a water-repellent finish which does not cause a poor operation, even when

water, seawater, etc. should prevent trespassing upon the interior of the main part of a reel first and should be flooded in it.

[0008]

[Means for Solving the Problem] invention according to claim 1 -- the surface composition of a fishing reel -- the path (A, B, C, D) in which water infiltrates into the interior of the main part of a reel (1 11) among members -- and the main part internal configuration of a reel -- to the part (31a, 31b) to which the water which invaded among members adheres. It is the fishing reel characterized by having distributed the volatile solvent and applying the particle (32a) of a fluorine compound, silicon compounds, or such mixture with a binder (32b).

[0009] Invention according to claim 2 is the fluoro-resin [ like 6 3 fluoride / fluoride graphite, polytetrafluoroethylene, poly trifluoroethylene, chlorotrifluoroethylene, tetrafluoroethylene, tetrafluoroethylene, and ethylene / and propylene fluoride and a fluoride vinyl ] whose aforementioned fluorine compound is, and the aforementioned silicon compound is a fishing reel characterized by being a TORIKURORO methylsilane, a chloro trimethyl silane, dichloro dimethylsilane, or silicon resin.

[0010]

[Embodiments of the Invention] Hereafter, the gestalt of the operation of a fishing reel which gave a water-repellent finish by this invention is explained.

[0011] this invention distributes and applies the particle of fluorine compounds and silicon compounds excellent in water repellence, or such mixture, and the binder which makes this adhere to a mechanism to the mechanism in which seawater etc. tends to adhere, as a water repellent at a volatile solvent. Since a volatile solvent vaporizes and it adheres to the particle of a fluorine compound, silicon compounds, or such mixture on the surface of a mechanism with a binder, the applied part has the outstanding water-repellent operation.

[0012] Therefore, even if it prevents the front face of a mechanism adhering to seawater etc. and transmitting it to it, and seawater etc. collects around a mechanism and a salt, a contaminant, etc. remain, the bite lump by the mechanism by these adhering on the surface of a mechanism etc. can be prevented.

[0013] Below, the water repellent which makes a volatile solvent come to distribute the particle and binder of the fluorine compound of this invention, silicon compounds, or such mixture is explained.

[0014] First, a fluorine compound, silicon compounds, or such mixture are explained.

[0015] As a fluorine compound particle, a fluoro-resin like 6 3 fluoride [ others, polytetrafluoroethylene, poly trifluoroethylene, chlorotrifluoroethylene, tetrafluoroethylene, tetrafluoroethylene, and ethylene ] and propylene fluoride and a fluoride vinyl etc. is used, for example. [ particle / fluoride graphite / of a polymer state or an oligomer state ] In this case, since water repellence improves so that the density of a fluorine atom becomes high, as for the size of these particles, it is desirable that it is detailed as much as possible, and its particle whose particle size is about about 0.3-4 micrometers is good.

[0016] Moreover, as a silicon compound particle, the particle of the thermosetting resin which a TORIKURORO methylsilane, a chloro trimethyl silane, dichloro dimethylsilane, or silicon added etc. is used. It is desirable that the size of these particles is detailed as much as possible also in this case, and the particle whose particle size is about about 0.3-4 micrometers is good.

[0017] In addition, although both a fluorine compound and a silicon compound are inactive chemically, and are excellent in water repellence and corrosion resistance is given to a member, it can be desirable to use it as mixture of a silicon compound or a fluorine compound, and a silicon compound, since the adhesive property is sometimes small in case it is a difficulty that a fluorine compound is expensive and a water-repellent coat is further formed like this invention, water repellence can be shown effectively, and the corrosion resistance of a member can be raised.

[0018] next -- as a binder -- camphor, paraffin, resin, PVA (polyvinyl alcohol), etc. -- others -- there is a fluoro-resin derivative or a fluorochemical surfactant. For example, the above-mentioned fluorine compound particle is mixed, and it is used for these, adding so that a fluorine atom may become number

capacity %.

[0019] About a volatile solvent, there are a xylene, a mineral spirit, toluene, butyl acetate, a methanol, ethylene glycol, FURORINATO (fluorine system inactive liquid), a ligroin, etc. A fluorine content polymer particle with a particle size of about 0.3-4 micrometers and the above-mentioned binder are used for them, dissolving or distributing these.

[0020]

[Example] The example of this invention is hereafter explained with reference to an appending drawing.

[0021] - An example 1-this example is the spinning reel of the lever-brake formula for surf-fishing.

[0022] Drawing 1 shows the side cross section of a spinning reel. This kind of reel is formed in the anterior part of the main part 1 of a reel possible [ rotation of a shaft tube 18 ] through the bearing 6 for shaft tube support. In the shaft tube 18, the spool shaft 10 has penetrated possible [ movement to shaft orientations ], and the spool 9 is being fixed to the point of this spool shaft 10. Moreover, in the rotation frame 2 supported possible [ rotation ] to the anterior part of the main part 1 of a reel, in the one way clutch, on the other hand, the braking board 3 is formed with this rotation frame so that \*\*\*\*\* may be possible only to \*\*. And this braking board is \*\*\*\*(ed) on reel foot 4 at a rockable, and it is making the inner edge of a brake lever 5 prepared so that an outer edge's could be operated by the digiti manus which grasped the fishing rod insert within the rotation limit from a posterior part, and it is formed so that rotation of the rotation frame 2 can be braked.

[0023] Therefore, the water adhering to the portion exposed to the brake lever exterior, such as seawater, is transmitted to a brake lever 5, for example, trickles it within the rotation limit through the anterior part of the main part of a reel, or Path B through Path A. The seawater dropped at the anterior part of the main part of a reel through Path A adheres to the bearing 6 for shaft tube support prepared in the anterior part of the main part of a reel, the inversion stop gear tooth 7 and the inversion stop presser foot stitch tongue 8 in drawing 2, or this operation cam, and becomes the cause by \*\*\*\*\*, rust, etc. that an operation is poor. Moreover, the seawater dropped within the rotation limit through Path B adheres to the braking board 3 or this bearing for support, and causes the poor operation by \*\*\*\*\*, rust, etc.

[0024] Then, the interior of the main part of a reel is given a water-repellent finish by giving a water-repellent finish at the above-mentioned reel foot, a brake lever, etc. which are a water-entry path, and applying to the bearing for shaft tube support, an inversion stop gear tooth, an inversion stop presser foot stitch tongue or this operation cam, a control strip, or this bearing for support inside the main part of a reel etc. further the water repellent which makes a volatile solvent come to distribute the particle and binder of a fluorine compound, silicon compounds, or such mixture.

[0025] the particle of the fluorine compounds and the silicon compounds which the volatile solvent vaporized and are excellent in water repellence after adhesion since the volatile solvent was distributed to the member to which seawater etc. tends to adhere as mentioned above and this invention applied to it the particle of fluorine compounds and silicon compounds excellent in water repellence, or such mixture, and the binder which makes this adhere to a mechanism member, or such mixture -- a binder -- a mechanism -- it adheres on the surface of a member, and a water-repellent effect is shown

[0026] Especially the above-mentioned water-repellent finish shows a water-repellent finish which was excellent also by distributing a volatile solvent and applying the particle of a tetrafluoroethylene resin, silicon resin, or such mixture with the binder containing polymer.

[0027] drawing 5 -- the member inside Lille -- the state where it gave a water-repellent finish by the above-mentioned method in between is shown since the volatile solvent has vaporized completely in this state -- the particle of a fluorine compound, silicon compounds, or such mixture, i.e., water-repellent material 32a, -- binder 32b -- a mechanism -- it adheres to the front face of Members 31a and 31b firmly, and the water-repellent film 32 is formed

[0028] Thus, since it applies as a water repellent which comes to distribute a water-repellent material to a volatile solvent with a binder according to the water-repellent-finish method of this invention, even if it applies to a direct member, the adhesion of a water-repellent material is good, forms a uniform water-repellent film, and is excellent in water repellence. furthermore, the particle of the above-mentioned fluorine compound, silicon compounds or such mixture especially a tetrafluoroethylene resin, silicon

resin, or such mixture -- a member -- since it does not join together in between and moreover excels in an aging resistance and abrasion resistance -- the internal configuration of a reel -- it is extremely suitable as a water repellent of the high part of contact nature between members like a member [0029] therefore, a mechanism -- the front face of a member adheres to seawater etc. and it is transmitted to it -- it can prevent -- moreover, a mechanism -- a member -- \*\*\*\*\* seawater etc. collects on the outskirts and a salt and dust remain -- these foreign matters -- a mechanism -- the bite lump by the mechanism by adhering on the surface of a member etc. can be prevented

[0030] Moreover, in an above-mentioned example, although the spinning reel of the lever-brake formula which brakes the braking board prepared only for Mukai possible [ \*\*\*\*\* ] on the other hand with the rotation frame in the brake lever was explained, the spinning reel of the lever-brake formula which brakes a rotation frame directly in a brake lever is sufficient, and the general spinning reel which is not a lever-brake formula is sufficient.

[0031] In addition, it gives a water-repellent finish in the crevice between the main part of a reel, and a rotation frame, and you may make it prevent permeation of the seawater of a rotation within the limit in a general spinning reel.

[0032] - An example 2-this example is about both the bearing reel, and drawing 3 shows the side cross section of both the bearing reel.

[0033] This kind of reel is formed possible [ rotation ] by the handle 13 which formed the spool 12 supported possible [ rotation ] in one side plate 11a of the main part of a reel between the both-sides boards (11a and 11b) of the main part 11 of a reel.

[0034] And for example, water, such as seawater, infiltrates into the interior of the main part of a reel further from the gap between the drag regulation lever 16 and the drag presetting screw 17 (path D) between the main part 11 of a reel, and a spool 12 (path C), or between one side plate 11a and the handle section.

[0035] therefore, various mechanisms while resulting [ from a main part ] in the interior of a both-sides board, or a handle -- the water which water, such as seawater which infiltrated into the crevice between members, was transmitted to for example, the path C, and invaded adheres to the bearing 14 for spool support, and the water which was transmitted to Path D and invaded adheres to the bearing 15 for handle support, and becomes the cause by \*\*\*\*\* or rust that an operation is poor When it adheres to various mechanism members, such as an inversion stop gear tooth and an inversion stop presser foot stitch tongue, operating becomes impossible and it stops in addition, functioning at all as a reel with \*\*\*\*\* , rust, etc.

[0036] Then, especially this invention is a part which is easy to be flooded inside the main part of a reel also in the inside on the front face of a reel. And contact other members, such as a spool and a lever, as mentioned above, and the water repellent which makes a volatile solvent come to distribute the particle and binder of a fluorine compound, silicon compounds, or such mixture is applied to the functioning mechanism member. Though it should prevent and should be flooded, that water infiltrates into the interior of the main part of a reel The above-mentioned bearing for spool support, the bearing for handle \*\*\*\*\*, an inversion stop gear tooth, By applying the water repellent which makes a volatile solvent come to distribute the particle and binder of a fluorine compound, silicon compounds, or such mixture to various mechanism members, such as an inversion stop presser foot stitch tongue, the interior of the main part of a reel is given a water-repellent finish, and since the operation by \*\*\*\*\* or rust is poor, it is avoidable.

[0037] Especially the above-mentioned water-repellent finish shows a water-repellent finish which was excellent also by distributing a volatile solvent and applying the particle of a tetrafluoroethylene resin, silicon resin, or such mixture with a binder.

[0038] Since it applies as a water repellent which comes to distribute a water-repellent material to a volatile solvent with a binder according to the above-mentioned water-repellent-finish method Even if it applies to a direct member, the adhesion of a water-repellent material is good and forms a uniform water-repellent film. it not only excels in water repellence, but The particle of the above-mentioned fluorine compound, silicon compounds or such mixture especially a tetrafluoroethylene resin, silicon

resin, or such mixture since it excels in an aging resistance and abrasion resistance -- the internal configuration of a reel -- it is extremely suitable as a water repellent of the high part of contact nature between members like a member

[0039] Moreover, as the method of application of the water repellent which comes to distribute a water-repellent material to a volatile solvent with a binder, the well-known adhesion methods, such as an application, spraying, etc. with the brush, can be used.

[0040] Moreover, in an above-mentioned example, although both the bearing reel of manual system was explained, you may be both the bearing reel of the electric formula which rotates a spool with the spool drive motor built in in the main part of a reel, or the spool.

[0041]

[Effect of the Invention] According to this invention, the following effects are acquired.

[0042] 1. Even if it is dropped on the predetermined path on the front face of a reel where water may infiltrate into the interior of the main part of a reel, without the water which infiltrates into the interior being transmitted by water-repellent operation since the particle of a fluorine compound, silicon compounds, or such mixture is applied as a water repellent which it comes to distribute to a volatile solvent with a binder and is not dropped on it, flood can be prevented by water-repellent operation.

[0043] 2. -- the member according [ since the particle of a fluorine compound, silicon compounds, or such mixture is applied to the mechanism part on which water collects as a water repellent which it comes to distribute to a volatile solvent with a binder even when flooded inside Lille, can protect the part concerned from the corrosion by \*\*\*\*\*, rust, etc., and ] to a water repellent -- since combination of a between is not produced, improvement in operation endurance can be aimed at

[0044] 3. Since it applies only to the part on which the path and water with which the particle of a fluorine compound, silicon compounds, or such mixture is distributed to a volatile solvent with a binder, and water trespasses upon the interior of the main part of a reel as a water repellent collect, by vaporizing a solvent, a uniform water-repellent film can be formed in a member simple, and a water-repellent finish is efficiently given as the whole reel.

[0045] 4. Since it applies as a water repellent which comes to distribute a water-repellent material to a volatile solvent with a binder, even if it applies to a direct member, the adhesion of a water-repellent material is good and can give a water-repellent finish from which the uniform water-repellent film was formed and which was excelled in water repellence.

[0046] 5. since the particle of the fluorine compounds or silicon compounds which are used as a water-repellent material or such mixture especially a tetrafluoroethylene resin, silicon resin, or such mixture is excellent in an aging resistance and abrasion resistance -- the internal configuration of a reel -- like a member, it is extremely suitable as a water-repellent finish in the high part of the contact nature between members

[0047] Since water, seawater, etc. give a water-repellent finish at the path which trespasses upon the interior of the main part of a reel according to this invention as stated above, the time and effort of a useless water-repellent finish can be saved, and the whole internal structure can be protected from the corrosion by flood, the bite lump by the foreign matter, etc. Furthermore, even if flooded inside the main part of a reel, a reel can be protected from the corrosion of a member by flood, the bite lump by the foreign matter, etc. by giving a water-repellent finish only at the part on which the water which invaded collects.

[0048] Therefore, since it applies as a water repellent which productive efficiency is good and comes to distribute a water-repellent material to a volatile solvent with a binder further since it is not necessary to carry out water repellent finishing to all members like the conventional water-repellent finish, even if it applies to a direct member, the adhesion of a water-repellent material is good and can give a water-repellent finish from which the uniform water-repellent film was formed and which was excelled in water repellence. furthermore, the member excel in an aging resistance and abrasion resistance by distributing and applying these to a volatile solvent with a binder, since the particle of a fluorine compound, silicon compounds, or such mixture is used as a water-repellent material, and according to a water-repellent coat -- the unnecessary combination between between is canceled, and the reel for \*\*

excellent in flood-proof nature, operation endurance, etc. can be manufactured efficiently, and can be offered